



Trauma and Reconstruction

A Late Presentation of Spontaneous Bladder Rupture During Labor

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ABSTRACT

Spontaneous bladder rupture is usually due to bladder diseases. Bladder rupture during labor or postpartum is extremely rare. Acute abdomen is the usual presentation of spontaneous bladder rupture. Patients may complain of suprapubic pain, anuria and hematuria. Some patients with intraperitoneal bladder rupture may have no abdominal pain and can pass urine without any symptoms so the diagnosis of intraperitoneal rupture may be difficult in these situations. We report a nulliparous woman with abdominal pain and distension about 20 days after normal vaginal delivery. There was intraperitoneal rupture of bladder in dome of bladder which was sealed by jejunum.

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Introduction

The term spontaneous bladder rupture is applied to those cases in which there is neither a history of antecedent trauma nor any underlying bladder pathology.^{1,2} Spontaneous bladder rupture during labor or postpartum is extremely rare.³ It was first reported by Kibel AS et al in 1995.⁴ It is a surgical postpartum emergency.³

Increased urinary retention during intrapartum and postpartum period, particularly in nulliparous patient, may cause bladder injury if distended bladder was not evacuated. Normal vaginal delivery in the presence of distended bladder may lead to bladder rupture.³

This condition is totally preventable by evacuating the bladder before the patient goes to second stage of labor. So emptying of the bladder should be done routinely in each patient before the patient proceeds to second stage of the delivery.¹

Case report

A 25 nulliparous year old woman was admitted to this hospital with abdominal pain and distension about 20 days after normal vaginal delivery which was performed successfully in another hospital, with a second degree perineal tear. She had an uneventful pregnancy without any genitourinary problems. During labor, she was unable to empty her bladder, thus it was emptied by urinary catheter. After 24 h she was discharged home. She mentioned that she was unable to urinate for approximately 1 week till she went to

a clinic, and her bladder was emptied by a catheter. After that she suffered from abdominal pain and distension that was progressing during the week. Finally she admitted to our hospital with complaint of abdominal pain. She did not mention any previous trauma to her abdomen.

On admission, her blood pressure was 100/60 with 110 pulse rate and low grade fever. Her abdomen was distended, with generalized tenderness, no rebound or guarding was found. She admitted and after brief resuscitation and sonography that revealed massive free abdominal fluid, she took to operation room. Her renal function test was normal. Laparotomy was performed, about 2 L of serous fluid was suctioned. There was intraperitoneal rupture of the bladder, about 4 cm laceration in dome of the bladder, that was sealed by jejunum. Bladder was repaired in two layers (Fig. 1). Resection and anastomosis of involved intestine was performed. She had uneventful post-operative recovery course, she was discharged on 4th post op day with urinary catheter. The urinary catheter was removed after 3 weeks. Her follow up course was uneventful.

Discussion

Spontaneous bladder rupture is usually due to bladder disease, history of recent trauma to pelvic area, in the setting of acute or chronic urinary distension, malignant disease, anatomical outflow obstructions, indwelling catheters, instrumentation, neurogenic bladder, bladder tumors, post radiotherapy, chronic infective diseases, necrotizing cystitis, or a combination of these.^{3,5–7} Postpartum patients with episiotomy or perineal repair frequently experience voiding difficulty which may lead to urinary retention.

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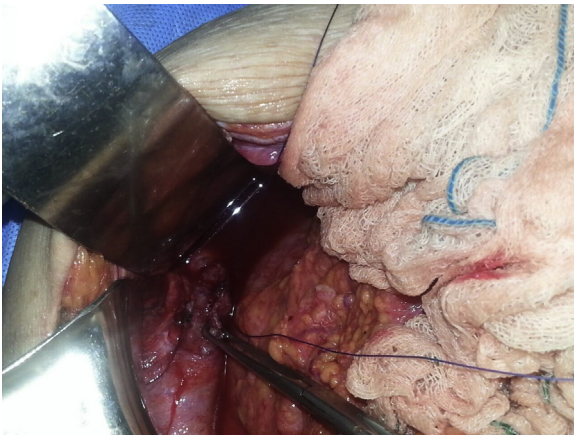


Figure 1. Repair of bladder rupture.

Retention may lead to over distension and bladder rupture. So it is important to observe postpartum patient output.³

Acute abdomen is the usual presentation of spontaneous bladder rupture.⁵ Patients may complain of suprapubic pain, anuria and hematuria. Some patients with intraperitoneal bladder rupture may have no abdominal pain and can pass urine without any symptoms so the diagnosis of intraperitoneal rupture may be difficult in these situations. Extra peritoneal rupture may be unrecognized for a while.³

In our patient bladder rupture seems to be due to bladder distension during normal vaginal delivery about 20d prior to acute presentation. She presented with abdominal pain and biochemical features of kidney impairment and in shock state.

These symptoms and diagnostic methods were reported by Mokena et al in his review of forty-four patients, of mean age 33 3-years, over a period of 7-years.⁸ The mean delay between an identifiable incident or presentation and diagnosis was 5 4-days. The mean admission or preoperative levels of blood urea and creatinine were raised to 19.6 mmol/l and 362 μ mol/l respectively in those with a delayed diagnosis. The diagnosis was made by voiding cystourethrography in 36 patients and by laparotomy in eight.⁶

In patients with minor bleeding, without sepsis and protrusion of the bowel in the bladder, conservative management is usually

sufficient. Cystoscopy can be helpful in documenting bladder perforation and decision making in management when there is no peritonitis.³

Diagnosis depends on retrograde cystoscopy, analysis of ascetic fluid for urea and creatinine and blood biochemistry suggestive of renal failure and exploratory laparotomy.⁵

The elevated serum urea and creatinine occur in 45% of patients presenting within 24 h of rupture and in 100% after 24 h of bladder rupture. Anuria, oliguria, hematuria, vague abdominal pain and ascites in association with elevated serum urea and creatinine should raise the possibility of bladder rupture.³

Operative treatment consists of urine removal from the peritoneal cavity, closing the rupture and instituting good vesicle drainage. Early diagnosis and prompt surgical treatment decreases the morbidity and mortality associated with this condition.⁵

Full urological evaluation of all patients with spontaneous bladder rupture is mandatory to identify possible underlying bladder disease that may result in recurrent bladder rupture. Even if, urological evaluation do not show any evidence of underlying bladder pathology, unrecognized neurogenic bladder dysfunction cannot be roll out. A tissue sample taken intraoperative from bladder may show underlying pathology.³

Conflict of interest

The author(s) report no financial or other conflict of interest relevant to the subject of this article.

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